

Notice of Allowability

Application No.

10/711,168

Examiner

Russell Frejd

Applicant(s)

BREILAND ET AL.

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to applicant's amendment received 5 October 2006.
2. ☒ The allowed claim(s) is/are 2-31.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

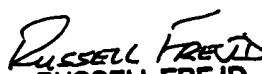
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


RUSSELL FREJD
PRIMARY EXAMINER

In re Application of: Breiland et al.

Allowance of Application # 10/711,168

1. The following communication is in response to applicant's amendment received 5-October-2006. Claim 1 has been cancelled as per this amendment, and new claim 31 has been added.

Examiner's Amendment

2. An Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 C.F.R. 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the Issue Fee. Authorization for this Examiner's Amendment was given by Jack Friedman (Reg. No. 44,688) on 13-November-2006.

2.1 In the Claims:

Claim 22 line 6 Change "said circuit subdivisions" to --said equivalent circuit subdivisions--.

Claim 30 line 1 Delete "combining the equivalent circuit subdivisions" and Add --outputting said description--.

Reasons for Allowance

3. The following is an Examiner's Statement of Reasons for the indication of allowable subject matter.

In re Application of: Breiland et al.

3.1 The instant application is directed to a non-obvious improvement over the inventions described in the related prior art, and specifically the invention in U.S. Patent No. 6,584,596 to Buffet et al., which describes designing voltage partitions in a solder bump package for an integrated chip, which allows for one or more regions (islands) of a chip to be powered by both a chip-wide power source and one or more additional voltage island power sources which can be switched on and off by the user as the operation of the integrated circuit demands.

3.2 The improvement of the present invention, in various embodiments, provides a method of power supply noise and signal coupling analysis for creating a frequency-dependent electrical model related to a microelectronic package, wherein: 1) the microelectronic package structure is divided into a hierarchy of smaller cubes or cells; 2) the size of each cell is determined from the fastest signal rise time in the microelectronic package, as in independent claims 2 and 19, or, alternatively, as a fraction of the wavelength of the signal knee frequency, as in independent claims 12 and 22; 3) equivalent circuits are calculated for each of the cells; and 4) a description utilizing the equivalent circuits is outputted to create the model. These patentable distinctions are included in each of the independent claims, nos. 1, 12, 19 and 22.

3.3 The art of record, either individually or in combination, fails to teach, suggest, or render obvious the useful, concrete and tangible <method for creating a frequency-dependent electrical model> having the corresponding structure which is disclosed in the specification and equivalents thereof at least at page 8, line 8 through page 25, line 8, and Figures 1-13C. In view

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of the foregoing, the claims of the present application are found to be patentable over the prior art.

Response Guidelines

4. Any comments considered necessary by applicant **MUST** be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably accompany the Issue Fee. Such submissions should clearly be labeled "Comments on Statement of Reasons for Allowance".

4.1 Any response to the Examiner in regard to this allowance should be

directed to: Russell Frejd, telephone number (571) 272-3779, Monday-Friday from 0530 to 1400 ET, or the examiner's supervisor, Kamini Shah, telephone number (571) 272-2279. Inquires of a general nature or relating to the status of this application should be directed to the TC2100 Group Receptionist (571) 272-2100.

mailed to: Commissioner of Patents and Trademarks
P.O. Box 1450, Alexandria, VA 22313-1450

or faxed to: (571) 273-8300

Hand-delivered responses should be brought to the Customer Service Window, Randolph Building, 401 Dulany Street, Alexandria, VA, 22314.

Date: 13-November-2006

RUSSELL FREJD

**RUSSELL FREJD
PRIMARY EXAMINER**